

2590
0702

#5



OIPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/057,726

DATE: 07/09/2002
TIME: 14:01:24

Input Set : A:\21258200US.app
Output Set: N:\CRF3\07092002\J057726.raw

ENTERED

3 <110> APPLICANT: Owens, Gary K.
4 Manabe, Ichiro
6 <120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR EXPRESSING POLYNUCLEOTIDES
7 SPECIFICALLY IN SMOOTH MUSCLE CELLS IN VIVO
9 <130> FILE REFERENCE: 021258-000200US
11 <140> CURRENT APPLICATION NUMBER: 10/057726
C--> 12 <141> CURRENT FILING DATE: 2002-06-24
14 <150> PRIOR APPLICATION NUMBER: US 60/263,811
15 <151> PRIOR FILING DATE: 2001-01-24
17 <150> PRIOR APPLICATION NUMBER: US 09/600,319
18 <151> PRIOR FILING DATE: 2000-07-13
20 <150> PRIOR APPLICATION NUMBER: WO PCT/US99/01038
21 <151> PRIOR FILING DATE: 1999-01-15
23 <150> PRIOR APPLICATION NUMBER: US 60/071,300
24 <151> PRIOR FILING DATE: 1998-01-16
26 <160> NUMBER OF SEQ ID NOS: 23
28 <170> SOFTWARE: PatentIn Ver. 2.1
30 <210> SEQ ID NO: 1
31 <211> LENGTH: 12
32 <212> TYPE: DNA
33 <213> ORGANISM: Artificial Sequence
35 <220> FEATURE:
36 <223> OTHER INFORMATION: Description of Artificial Sequence: CArG1 sequence
37 to be mutated
39 <400> SEQUENCE: 1
40 ttccctttat gg 12
43 <210> SEQ ID NO: 2
44 <211> LENGTH: 11
45 <212> TYPE: DNA
46 <213> ORGANISM: Artificial Sequence
48 <220> FEATURE:
49 <223> OTHER INFORMATION: Description of Artificial Sequence: CArG1 mutated
50 sequence
52 <400> SEQUENCE: 2
53 ggatcctatg g 11
56 <210> SEQ ID NO: 3
57 <211> LENGTH: 10
58 <212> TYPE: DNA
59 <213> ORGANISM: Artificial Sequence
61 <220> FEATURE:
62 <223> OTHER INFORMATION: Description of Artificial Sequence: CArG2 sequence
63 to be mutated
65 <400> SEQUENCE: 3

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/057,726

DATE: 07/09/2002

TIME: 14:01:24

Input Set : A:\21258200US.app
Output Set: N:\CRF3\07092002\J057726.raw

66 cctttttggg 10
69 <210> SEQ ID NO: 4
70 <211> LENGTH: 10
71 <212> TYPE: DNA
72 <213> ORGANISM: Artificial Sequence
74 <220> FEATURE:
75 <223> OTHER INFORMATION: Description of Artificial Sequence: CArG2 mutated
76 sequence
78 <400> SEQUENCE: 4
79 atccctttggg 10
82 <210> SEQ ID NO: 5
83 <211> LENGTH: 10
84 <212> TYPE: DNA
85 <213> ORGANISM: Artificial Sequence
87 <220> FEATURE:
88 <223> OTHER INFORMATION: Description of Artificial Sequence: Intronic CArG
89 sequence to be mutated
91 <400> SEQUENCE: 5
92 ccttgtatgg 10
95 <210> SEQ ID NO: 6
96 <211> LENGTH: 10
97 <212> TYPE: DNA
98 <213> ORGANISM: Artificial Sequence
100 <220> FEATURE:
101 <223> OTHER INFORMATION: Description of Artificial Sequence: Intronic CArG
102 mutated sequence
104 <400> SEQUENCE: 6
105 aggcctatgg 10
108 <210> SEQ ID NO: 7
109 <211> LENGTH: 20
110 <212> TYPE: DNA
111 <213> ORGANISM: Artificial Sequence
113 <220> FEATURE:
114 <223> OTHER INFORMATION: Description of Artificial Sequence: CArG1 sense
115 strand EMSA probe
117 <400> SEQUENCE: 7
118 gacttccttt tatggcctga 20
121 <210> SEQ ID NO: 8
122 <211> LENGTH: 20
123 <212> TYPE: DNA
124 <213> ORGANISM: Artificial Sequence
126 <220> FEATURE:
127 <223> OTHER INFORMATION: Description of Artificial Sequence: CArG2 sense
128 strand EMSA probe
130 <400> SEQUENCE: 8
131 cctggccttt ttgggttgtt 20
134 <210> SEQ ID NO: 9
135 <211> LENGTH: 20
136 <212> TYPE: DNA

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/057,726

DATE: 07/09/2002
TIME: 14:01:24

Input Set : A:\21258200US.app
Output Set: N:\CRF3\07092002\J057726.raw

137 <213> ORGANISM: Artificial Sequence
139 <220> FEATURE:
140 <223> OTHER INFORMATION: Description of Artificial Sequence: Intronic CArg
141 sense strand EMSA probe
143 <400> SEQUENCE: 9
144 catgcccttg tatggtagtg 20
147 <210> SEQ ID NO: 10
148 <211> LENGTH: 30
149 <212> TYPE: DNA
150 <213> ORGANISM: Artificial Sequence
152 <220> FEATURE:
153 <223> OTHER INFORMATION: Description of Artificial Sequence: Insulin PCR
154 primer 1
156 <400> SEQUENCE: 10
157 gccaaaactc tagggacttt aggaaggatg 30
160 <210> SEQ ID NO: 11
161 <211> LENGTH: 34
162 <212> TYPE: DNA
163 <213> ORGANISM: Artificial Sequence
165 <220> FEATURE:
166 <223> OTHER INFORMATION: Description of Artificial Sequence: Insulin PCR
167 primer 2
169 <400> SEQUENCE: 11
170 gccgggcaac ctccagtgcc aaggtctgaa gatc 34
173 <210> SEQ ID NO: 12
174 <211> LENGTH: 30
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: Description of Artificial Sequence: Beta-globin
180 PCR primer 1
182 <400> SEQUENCE: 12
183 cagcgtttc ttcagaggg a t a c c c a g a g 30
186 <210> SEQ ID NO: 13
187 <211> LENGTH: 30
188 <212> TYPE: DNA
189 <213> ORGANISM: Artificial Sequence
191 <220> FEATURE:
192 <223> OTHER INFORMATION: Description of Artificial Sequence: Beta-globin
193 PCR primer 2
195 <400> SEQUENCE: 13
196 tcagaagcaa atgtgaggag cgactgatcc 30
199 <210> SEQ ID NO: 14
200 <211> LENGTH: 30
201 <212> TYPE: DNA
202 <213> ORGANISM: Artificial Sequence
204 <220> FEATURE:
205 <223> OTHER INFORMATION: Description of Artificial Sequence: Skeletal
206 alpha-actin PCR primer 1

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/057,726

DATE: 07/09/2002

TIME: 14:01:24

Input Set : A:\21258200US.app

Output Set: N:\CRF3\07092002\J057726.raw

208 <400> SEQUENCE: 14
 209 caggctgaga agcagccgaa gggactctag 30
 212 <210> SEQ ID NO: 15
 213 <211> LENGTH: 30
 214 <212> TYPE: DNA
 215 <213> ORGANISM: Artificial Sequence
 217 <220> FEATURE:
 218 <223> OTHER INFORMATION: Description of Artificial Sequence: Skeletal
 219 alpha-actin PCR primer 2
 221 <400> SEQUENCE: 15
 222 acctccaccc tacctgctgc tctgactctg 30
 225 <210> SEQ ID NO: 16
 226 <211> LENGTH: 16011
 227 <212> TYPE: DNA
 228 <213> ORGANISM: Rattus sp.
 230 <400> SEQUENCE: 16
 231 agatcttaaa acacatcaac ctgggctgag gggatgtgtg tctctgtgtc tgtgtatgca 60
 232 catgcatttg aggccagatg aaaatgtca tagtcctctc actgctttat tcccttgaga 120
 233 cagggtccct cactgaactt gttggagcta tgctggtagc cagcaagccc cagtggcctt 180
 234 cctgtctcta tctcacacag cacaatatgt gtggccatgc tccactttt tacatggaaa 240
 235 ttggggtctt ccaactgggg ttctcatttg tgcagtgaca ctcttccca ctgagccatc 300
 236 tcctcaggcc agctgatata ttttaaata attaaatatt tagcacatgc ctttagaagc 360
 237 caatagctat ttaaagctgt ttgcttaaaa aaaaaaaaaa aaaaaagact tcattatccc 420
 238 aacactttag agggagagac aataattcca aaaccagaac cagccaggg acacagttag 480
 239 actttattta aaaaaaaaaa aaaaagaaaag aaagaaaaaaaaa aaaagaaaaa gaaaaaaaaa 540
 240 ggctccaaag agaaatttcc ctttcattcat ctaatcacaa gaaaacaatt tatttatttt 600
 241 gacatcaactc agtccaaagg agcttttgt aaagtgactt ctcttcattaa aataagtgac 660
 242 cttcccaac caccaaaaac aaaacagaaa cctctccct gttcttagat cctttgaag 720
 243 acttcagata cctgaagagt ggacagatat ttaccgatgt acttaatga acatactgtc 780
 244 cctgggtact gctcaagcat gccaggagag catggatgtt ttatgcaagg ctggcactgt 840
 245 cattaacaac ttagtaaggc ggagaagaca gagagcctct ctaagacaa tggcacataa 900
 246 ggacatgggt aaccccaagag gttcccggt agtacttagc agagctgaga tcagacttg 960
 247 gcctctgtgc tgccttgctt agtggcaac actcaagact gggtaaaca ataagttgat 1020
 248 ctgggatata gctcaagatcacactgaga attcaacact gggaggcag aggaggatcc 1080
 249 ctgggattgc tgcctggctc tctagcagcc tagcagaatc aacaaactcc aggttcagtg 1140
 250 agagatgctc aaaaaataaa atggaggagc aactgaacac actcagtgtt gaccacacaca 1200
 251 cacactaaag aacacgtgtt ccacacacag acagacacag gataacctac ccatgttgc 1260
 252 tatggactca gccagccca gttggaaact cagttcctct gttacttctt ttcaaaccctg 1320
 253 ggtcctcagc gatgtgttgg ggaacctact tcacggcattt attctggca ttatgtttaa 1380
 254 aggaagcagt aaagttttcc ttcttgc tggatgttggatgttggatgttggatgttggatgtt 1440
 255 ccatctctag gactcacata aagacaccca gactgcactg gccagtaagc ctcacccatg 1500
 256 cctccaagcc tggctgtgag agactgtctc aaaaaacaag taaaaacaac aaaatcaatg 1560
 257 tcagatgtgc acacatcgaa tcccgatgt tgcacggcat gttgcagtc agccttgcattt 1620
 258 acagagagtt cttaggcaac cagctataca cagtgagacc ctgtgttgc ggcctcctaa 1680
 259 gaactgacat ttgtgactga cagatgtgca catctaccac atgcacatca cagttccat 1740
 260 ttacaaaaaa gtttaacact tactaattga tttagggatgtt gggcacccca ctgttacatg 1800
 261 tggaaagccag agaatgtatgt gttccagtc gtcagttgtt tccttccacc atgttagtcc 1860
 262 taaaaatggaa actcaaggca gtcttggcag caagtgcattt atccatagtg ccatcttatt 1920
 263 ggcccagtct cttataatg aaatttattt gttttcaag ttatgtttaat tctttaaaaa 1980

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/057,726

DATE: 07/09/2002

TIME: 14:01:24

Input Set : A:\21258200US.app

Output Set: N:\CRF3\07092002\J057726.raw

264 tcagctgtgc tccttggagt ttgacttac tgaaggctgc tacaggagtg cccttccttc 2040
 265 ctagcaactg gatggccagc tctgggctgg tttcagacta gggtaggtgc aggtggcc 2100
 266 tgggcttccc tccttcattc ctccctggct caatgccaag ccggtttcca ttccctttac 2160
 267 gtgcactgcg aagaggcttt ggggaagcgg cctcatccat catgcagaga gctcctcccc 2220
 268 cacccttaca gagagccagc caagctgtcg tccttggctc tgctctgtcc accctgtgag 2280
 269 gaggctggga tgaggttggg gatggggagg atcaggattc agatgtttc aagtctgaga 2340
 270 agcagggtgag ctgggtccta gaagaatatg gaagggggtct actgggggtt agatataatg 2400
 271 cactgtatca aagtcaacag gggggctgtg tggcttttc atatccaaa gtcagcttgg 2460
 272 tgctggtttc ctagggttcc tgagtccgac aaaggtgcag tgtgttaatc tcacaccact 2520
 273 tcaaggactg ttacaaaaaa aaaataggaa ggagctcgat tcgcccctt ttacaggcag 2580
 274 gttaactaaag agccagtact tgcccatgtt cctgtgtt aaaagaggct cagtagactc 2640
 275 ccattcaaaac aactgtgctc agaggccttc tgcgtcctg tggccaattc ccctattgct 2700
 276 ctctggagtg aatattgggaa tattaaacag tactgacctt gctgaggacc ctcagggtac 2760
 277 ttagcttcc tggcctgcaa aatggggctg ggacagggtt gccaggatca tcctctgggt 2820
 278 gggagaacca gtcacgtg ggtctggagc tcttattagt actgggggtcc ccataacgct 2880
 279 ccatgggctc agcgggaggc tgcacgggac catatttagt cagggggagc cagagcccc 2940
 280 ctggatgccc aagctgggaa ttcttgggtt gagaattgcg cctggcctt ttgggttgg 3000
 281 tcccggccag gcccaggagg gaggaccagc tcaggacctc gagggtccgt gcgcggggag 3060
 282 cgaggcgtcc ccggcctggc atgaggccaa ctctgcctcg acttccttt atggcctgag 3120
 283 tgtgagtgca tggagagtgg gaggaggaga gggagagagg gaggaaagaa agcgggggtgg 3180
 284 ggggggtgggg ggggtgggggg gtgggggggt gcggagagca gagacagaga cagagagaca 3240
 285 gagagacaca cagagagaga cagagagaca gagagacaca cagagagaga cagagacaga 3300
 286 cacacacaga gagagacaga cagacaaaga gagagacaga gacagagaga cacacacaga 3360
 287 gagacagaca gacaaaaaga gaagagagac agagactta gggacgtaat catcacaggg 3420
 288 aaatcaaagc taagagtgtg atgaaaagag tgtcaggtca gacaaaagag acaggggcca 3480
 289 agatccgtac agggctaagg gacacagaga ttgagaacac cgagtggtaa gggggcagc 3540
 290 tgacagcagg tccccacat tcttttagag tcttagcatg catcctccaa gtgcataac 3600
 291 gcagtagcaa cccgttttc aacgtgctc agagaaacca ttttattgtt cccagggcacc 3660
 292 ccgggtttag ggtgaaagga gctgcagaga acaagttga aaaacaagtt tcccagcagt 3720
 293 cacagaggat atgcagtgac tgtgccact tttttttt ttttaagtc ccctcccccc 3780
 294 ccccccggcc gccccggct tgctaagcac aacggcttc gaatcttagg aagtggcagg 3840
 295 cgaatgaaga gggatgagg gagagaggg ggcataagt ctccagttatg tatgaacaga 3900
 296 aagaggttaa aatccagctg gaatggaccc agggaaagaa attctcaagt ctcctacag 3960
 297 actctgaaca ccgaatccct tttctctaag gacgcaggat ctgggtggc gcaggagcg 4020
 298 aggcctgagg ctgtgggtca acttgcacgc agcccccctg cgcctgcgtc aggtggttcc 4080
 299 cagaggctct gttccctcacc tgcagggggc gctggaaagg gcagaggacc ctcaccccc 4140
 300 gcccggcagt caccccccct tccccacccct cgggtagcgc tgactctata aagccagatg 4200
 301 tccgaagcat acagagagat ttggaccatc ccaggctggg atcagtgtca gatccgagct 4260
 302 ctccatccgg ttttccctg ctgtccacc ccagtagcag atctgttaatg agaagttgt 4320
 303 cccttagggg caagcttggg cggtgagctt gagcagctt taaaacatcc tccagggagt 4380
 304 ggggacccca aggggtctg attgtcatct ttataagga cagtggaaag aagcccgta 4440
 305 caggaccacc ctagacccctc cgtgattact cccattctcc gcaccaaacc agcattctca 4500
 306 gttgcctat gaacagaacc acctggaaa gtgggttagg taattaaagg ttctggccac 4560
 307 tggggccaaat tccaggtatt ttaagactac agtctaaaaa gcaaacaaaa tggctactt 4620
 308 aaaaactaac tagtgacaca gtggacaagt gaactgtggt gaaaactgtg ggtctgaatt 4680
 309 caaataccag tattaaaaat aataagaagt ctggataaa tatccactga acatccccag 4740
 310 aataactcaa acatgggtt aagtttaatg actctgaaca caggccgtt gttcttattc 4800
 311 cactcctaattt ggaatgtgtt gttaaaatt tactggtaaa caaaaatgtt taatgttaaa 4860
 312 taaggtcggt ttttccaa aacacaaatc tccattaaa aggaacccctc 4920

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/057,726

DATE: 07/09/2002

TIME: 14:01:25

Input Set : A:\21258200US.app

Output Set: N:\CRF3\07092002\J057726.raw

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date